

CHAPTER 3.

ADOT Transportation Contracts

Many components of the 2015 Disparity Study require ADOT contract and subcontract data as building blocks for the analysis. When designing the availability research, for example, it is important to understand the geographic area from which ADOT draws contractors and consultants and the types of work involved in ADOT transportation contracts. The utilization and disparity analyses in the 2015 Disparity Study are based on information from ADOT prime contracts and subcontracts.

Before conducting other analyses, Keen Independent collected information for ADOT and local agency transportation contracts for the July 2007 through June 2013 study period. Chapter 3 describes the study team's process for compiling and merging these data. Chapter 3 consists of four parts:

- A. Overview of ADOT transportation contracts;
- B. Collection and analysis of ADOT contract data;
- C. Types of work involved in ADOT contracts; and
- D. Location of businesses performing ADOT work.

Appendix C provides additional detail concerning collection and analysis of contract data. Keen Independent updated the Chapter 3 and Appendix C from the 2014 Availability Study to include FTA- and FAA –funded contracts as well as refinements to FHWA- and state-funded contract data.

A. Overview of ADOT Transportation Contracts

ADOT uses FHWA, FTA, FAA and state funds to build and maintain transportation projects. The 2014 Availability Study focused on FHWA-funded contracts. Both the Availability Study and the Disparity Study included contracts awarded by cities, counties, other local agencies and tribal entities using money passed through ADOT.

- FHWA- and state-funded construction projects include building new highway segments and interchanges, widening and resurfacing roads, and improving bridges. Its FAA-funded construction contracts include runway-related work at Grand Canyon National Park Airport. FTA-funded contracts included some road-related work as well.
- There were some vertical construction contracts among the FHWA-, state, FTA-, and FAA-funded contracts.
- Engineering-related work includes design and management of projects, planning and environmental studies, surveying and other transportation-related consulting services (includes FHWA-, state-, FTA- and FAA-funded contracts).
- ADOT has design-build contracts that combine engineering and construction project activities (both FHWA- and state-funded contracts).
- ADOT's FTA-funded contracts also include vehicle purchases and transit services (and there is one small FHWA-funded transit services contract).

A single ADOT project can involve many types of businesses, as described below.

Prime contracts, subcontracts, trucking and materials supply. A typical construction project includes a prime contractor and a number of subcontractors. Trucking companies and materials suppliers are often involved in construction projects as well. Some subcontractors on ADOT construction projects further contract out work to what is known as a “second-tier” or “lower-tier” subcontractor. Keen Independent examined ADOT contract information for each level of participants.

Many ADOT projects have an engineering phase prior to construction that requires work performed by engineering companies and related firms. The engineering prime consultant retains the specialized subconsultants needed to complete these contracts. ADOT sometimes contracts with engineering companies through on-call agreements. When specific work is needed, ADOT issues task orders to those firms. Keen Independent included engineering task orders in this analysis.

For both construction and engineering contracts, Keen Independent separated the contract dollars going to subcontractors (and truckers and suppliers) from the dollars retained by the prime contractor. Keen Independent calculated the total dollars going to the prime contractor by subtracting subcontractor, trucker and supplier dollars from the total contract value. This step was important for both the availability analyses and the utilization analyses performed in the 2015 Disparity Study.

ADOT contracts and Local Public Agency Program contracts. The 2015 Disparity Study includes ADOT contracts and those for local agencies that use ADOT-administered funds. Through ADOT’s Local Public Agency (LPA) Program, USDOT funds for transportation projects go to cities, counties, regional transportation commissions, other local agencies and tribal entities.

Transportation-related contracts. The study focused on transportation construction and engineering contracts and does not include acquisition of real property. The study team excluded any contracts to not-for-profit entities or government agencies.

Regions. Based on ADOT and industry input, Keen Independent divided the Arizona contracting market into the three regions shown in Figure 3-1. “Location” refers to physical location of the project, not the ADOT office managing the work or the address of the contractor. Keen Independent coded statewide assignments and work not in a single physical location as “statewide.”

Figure 3-1.
Study regions

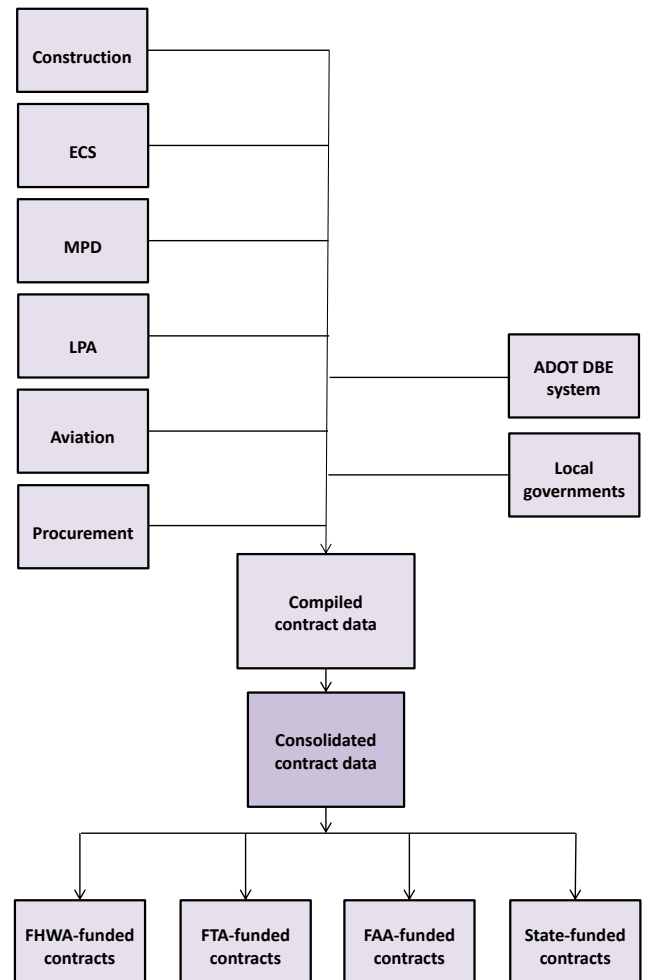


B. Collection and Analysis of Contract Data

As shown in Figure 3-2, Keen Independent collected data on ADOT's contracts from multiple sources. Data for most ADOT construction contracts administered by C&S came from ADOT's FAST system. The Engineering Consultant Section (ECS) provided information about many ADOT engineering contracts. ADOT's Procurement, Multi-modal Planning (MPD) and Aviation departments provided contract data maintained by their groups as well. Certain data on firms receiving ADOT work were also collected from the ADOT DBE System. Contracts for local agencies awarded with funds administered through the Local Public Agency (LPA) Section were obtained from three sources including individual local government agencies, LPA Contract Management System and ADOT's LPA Section.

Keen Independent merged contracts from different sources into one database, which was reviewed to exclude duplicate records, and then sorted by funding source (FHWA-, FTA-, FAA-, and state-funded contracts).

Figure 3-2.
Collection of contract data



Study period. Keen Independent examined contracts awarded from July 1, 2007 through June 30, 2013.

- **Study period start date.** The previous disparity study conducted for ADOT in 2009 examined contracts through June 30, 2007. To avoid a gap in the analysis of ADOT contracts, the study period for the Keen Independent research began with contracts awarded in July 2007.¹
- **Study period end date.** Because Keen Independent began compiling contract data in early 2014, it was appropriate to choose the close of the previous state fiscal year (June 30, 2013) as the study period end date.

¹ The study team also collected data for task orders executed from July 2007 through June 2013 on engineering-related contracts awarded before 2007.

Data sources for ADOT contracts. Keen Independent obtained data on prime contracts, subcontracts, trucking services and materials suppliers from ADOT records. To the extent possible, the dollar amounts used correspond to the total dollars paid or expected to be paid to the firm for services on that contract or subcontract.²

ADOT contract records provided information about award date, location (county), a general description of the work, whether or not the contract was FTA-, FAA- or FHWA-funded, and whether the DBE contract goals applied. Keen Independent used consistent methods to collect information on FHWA, FTA-, FAA- and state-funded contracts.

When there was any amount of USDOT-funding expected for a contract, ADOT typically treated that contract as USDOT-funded. “State-funded” contracts are those with no USDOT funding.

Some overlapping of contract data existed between department records. Keen Independent examined and removed any duplicate contracts.

Data sources for local agency contracts. ADOT maintains some information about local agency projects funded through the LPA Program, but does not obtain complete data about the prime contractors and subcontractors working on those projects. Therefore, Keen Independent collected construction and engineering contract data directly from local agencies that awarded contracts using LPA Program funds. ADOT’s LPA Contract Management System database also includes information for some local agency contracts.

Some multiple data sources provided information for a single contract. Keen Independent merged data from multiple sources into a unique record for each contract.

Limitations concerning contract data. As discussed in Appendix C, ADOT has not maintained comprehensive data concerning every subcontractor, trucker and supplier involved in ADOT or LPA contracts during the July 2007 through June 2013 study period. It has progressively improved its data collection in recent years. For some of this time period, ADOT accounting of second-tier contracts also appeared to be deficient.

These limitations concerning data for past contracts would not appear to have a meaningful effect on overall study results.

² For example, Keen Independent examined the *total* value of the awarded contract and related subcontracts for a May 2012 contract, not what was paid on that contract before the June 30, 2013 study period end date. For certain completed contracts and task orders, payment amounts were used to determine contract value.

C. Types of Work Involved in ADOT Contracts

Keen Independent included 2,125 transportation-related contracts and task orders totaling \$4.95 billion over the July 2007 through June 2013 study period. Figure 3-3 presents the number and dollar value of contracts in FHWA-, FTA-, FAA- and state-funded contracts.

Figure 3-3.
Number and dollars of ADOT and LPA transportation contracts,
July 2007-June 2013

	ADOT	Local Agency	Total
Number of contracts			
FHWA-funded	987	380	1,367
FAA-funded	18	0	18
FTA-funded	13	80	93
State-funded	<u>637</u>	<u>6</u>	<u>643</u>
Total	1,655	466	2,121
Dollars (by millions)			
FHWA-funded	\$ 3,278	\$ 395	\$ 3,672
FAA-funded	19	0	19
FTA-funded	8	10	18
State-funded	<u>1,224</u>	<u>14</u>	<u>1,238</u>
Total	\$ 4,529	\$ 419	\$ 4,948

Note: Numbers may not add due to rounding

Source: Keen Independent from ADOT and local agency contract data.

The study team coded types of work involved in each prime contract and subcontract based upon data in ADOT contract records and, as a supplement, information about the primary line of business of the firm performing the work. Keen Independent developed the work types based in part on the work type descriptions used by ADOT as well as Dun & Bradstreet's 8-digit classification codes.

Contract dollars by type of work for FHWA- and state-funded contracts. Just considering FHWA- and state-funded contracts, Figure 3-4 on the following page presents information about dollars for 40 different types of prime contract and subcontract work. Dollars for prime contracts are based on the contract dollars retained (i.e., not subcontracted out) by the prime contractor or prime consultant.

Figure 3-4.
Dollars of ADOT and LPA FHWA- and state-funded prime contracts and subcontracts
by type of work, July 2007-June 2013

Type of work	FHWA-funded		State-funded		Combined	
	Dollars (1000s)	Percent	Dollars (1000s)	Percent	Dollars (1000s)	Percent
General road construction and widening	\$ 1,797,112	48.9 %	\$ 475,920	38.4 %	\$ 2,273,032	46.3 %
Design engineering	164,732	4.5	188,876	15.3	353,608	7.2
Asphalt paving	165,729	4.5	15,198	1.2	180,927	3.7
Landscaping and related work	58,446	1.6	111,868	9.0	170,314	3.5
Pavement surface treatment	156,710	4.3	3,606	0.3	160,316	3.3
Bridge work	146,016	4.0	12,884	1.0	158,901	3.2
Guardrail, signs or fencing	124,113	3.4	29,229	2.4	153,342	3.1
Structural concrete work	83,921	2.3	42,933	3.5	126,853	2.6
Electrical work including lighting and signals	77,776	2.1	39,112	3.2	116,888	2.4
Steel work	94,107	2.6	20,875	1.7	114,982	2.3
Trucking or hauling	95,899	2.6	14,334	1.2	110,233	2.2
Temporary traffic control	74,463	2.0	17,001	1.4	91,464	1.9
Concrete flatwork (sidewalk, curb and gutter)	74,862	2.0	1,063	0.1	75,925	1.5
Striping or pavement markings	21,646	0.6	43,384	3.5	65,031	1.3
Excavation, grading and drainage	57,288	1.6	6,804	0.5	64,093	1.3
Drilling and foundations	41,747	1.1	20,728	1.7	62,475	1.3
Portland cement concrete paving	44,386	1.2	11,947	1.0	56,332	1.1
Soils and materials testing	39,487	1.1	8,211	0.7	47,698	1.0
Concrete cutting	34,086	0.9	6,115	0.5	40,201	0.8
Milling	18,982	0.5	17,868	1.4	36,850	0.8
Surveying and mapping	21,757	0.6	8,200	0.7	29,957	0.6
Transportation planning	17,534	0.5	11,690	0.9	29,224	0.6
Construction management	19,171	0.5	9,387	0.8	28,557	0.6
Environmental consulting	22,473	0.6	5,573	0.4	28,045	0.6
Underground utilities	21,553	0.6	1,259	0.1	22,812	0.5
Wrecking and demolition	5,360	0.1	7,420	0.6	12,780	0.3
Vertical construction	8,340	0.2	3,737	0.3	12,077	0.2
Erosion control	9,921	0.3	1,552	0.1	11,473	0.2
Painting for road or bridge projects	5,797	0.2	5,159	0.4	10,955	0.2
Concrete pumping	4,468	0.1	1,497	0.1	5,965	0.1
Asphalt , concrete or other paving materials	2,571	0.1	0	0.0	2,571	0.1
Transit services	719	0.0	0	0.0	719	0.0
Fence, guardrail materials	132	0.0	0	0.0	132	0.0
Petroleum	41	0.0	0	0.0	41	0.0
Other construction-related	118,564	3.2	25,327	2.0	143,890	2.9
Other engineering-related	19,049	0.5	581	0.0	19,630	0.4
Other materials	3,720	0.1	0	0.0	3,720	0.1
Other services	19,584	0.5	69,075	5.6	88,659	1.8
Total	\$ 3,672,259	100.0 %	\$ 1,238,412	100.0 %	\$ 4,910,671	100.0 %

Source: Keen Independent from ADOT and local agency contract data.

When prime contracts and subcontracts pertain to multiple types of work, Keen Independent coded the entire work element based on what appeared to be the predominant type of work in the contract or subcontract. For example, if a subcontract included fencing and landscaping, and it appeared that the work was predominantly fencing, the entire subcontract was coded as fencing.³

Similarly, an individual prime contract or subcontract was sometimes for a broad range of road construction activities. When a more specialized activity could not be identified as the primary area of work, these contracts were classified as road construction and widening.

As shown in Figure 3-4, the top four general types of work account for almost 60 percent of ADOT FHWA- and state-funded transportation contract dollars.

- Prime contracts and subcontracts for general road construction and widening accounted for about \$2.3 billion of the FHWA- and state-funded contract dollars examined, including prime contracts and subcontracts. This work area accounted for 46 percent of the contract dollars examined.
- Design engineering accounted for \$354 million or 7 percent of FHWA- and state-funded prime contracts and subcontracts. (Note that when contracts for design engineering included subcontracts for other types of work such as surveying or testing, these subcontracts were subtracted from the total for design engineering.)
- Asphalt paving accounted for \$181 million of FHWA- and state-funded prime contracts and subcontracts, or about 4 percent of the total. (Note that a prime contract or subcontract coded as general road construction and widening work could include asphalt paving, but was entirely coded as road construction because it appeared to include a broad set of work types, or the description of the work was not specific to asphalt paving.)
- Landscaping and related work accounted for the fourth largest dollar volume of FHWA- and state-funded work (\$170 million or 3 percent of the total).

Types of work that did not fit into the categories listed in Figure 3-4 were included in “other construction,” “other engineering-related services,” “other materials” or “other services” as appropriate. Together, these four “other” categories comprised 5 percent of FHWA- and state-funded contract dollars, as shown in Figure 3-4.

³ Data concerning subcontract awards or payments were for the entire subcontract, not individual work elements.

Contract dollars by type of work for FTA-funded contracts. FTA-funded contracts not only include some construction (vertical) and engineering, but substantial dollars going to vehicle purchases and private transit services providers. For example, transportation planning and transit services combined accounted for 68 percent of contract dollars. Figure 3-5 presents dollars by type of construction, goods or services for FTA-funded contracts.

Figure 3-5.
Dollars of ADOT and LPA FTA-funded prime contracts and subcontracts
by type of work, July 2007-June 2013

Type of work	FTA-funded	
	Dollars (1000s)	Percent
Transportation planning	\$ 5,903	34.4 %
Transit services	5,763	33.6
Vertical construction	1,106	6.4
General road construction and widening	654	3.8
Petroleum	433	2.5
Trucking or hauling	284	1.7
Design engineering	271	1.6
Steel work	218	1.3
Asphalt paving	144	0.8
Environmental consulting	128	0.7
Structural concrete work	71	0.4
Electrical work including lighting and signals	59	0.3
Concrete flatwork	56	0.3
Guardrail, signs or fencing	20	0.1
Underground utilities	19	0.1
Vehicle purchases	17	0.1
Landscaping and related work	16	0.1
Soils and materials testing	10	0.1
Asphalt , concrete or other paving materials	7	0.0
Striping or pavement markings	6	0.0
Painting for road or bridge projects	4	0.0
Surveying and mapping	2	0.0
Concrete cutting	1	0.0
Temporary traffic control	0	0.0
Other construction-related	7	0.0
Other materials	93	0.5
Other services	<u>1,873</u>	<u>10.9</u>
Total	\$ 17,164	100.0 %

Source: Keen Independent from ADOT and local agency contract data.

Contract dollars by type of work for FAA-funded contracts. Figure 3-6 presents information about dollars of prime contracts and subcontracts for ADOT’s FAA-funded contracts. As shown, much of the work is related to vertical construction and asphalt paving.

Figure 3-6.

Dollars of ADOT FAA-funded prime contracts and subcontracts by type of work, July 2007-June 2013

Type of work	FAA-funded	
	Dollars (1000s)	Percent
Vertical construction	\$7,615	39.5 %
Asphalt paving	4,830	25.1
Design engineering	2,764	14.3
Transportation planning	1,612	8.4
Vehicle purchases	1,440	7.5
Construction management	798	4.1
Wrecking and demolition	105	0.5
Environmental consulting	90	0.5
Other engineering-related	<u>16</u>	<u>0.1</u>
Total	\$19,270	100.0 %

Source: Keen Independent from ADOT and local agency contract data.

D. Location of Businesses Performing ADOT Work

In this study, analyses of local marketplace conditions and the availability of firms to perform contracts and subcontracts focus on the “relevant geographic market area” for ADOT contracting. The relevant geographic market area was determined through the following steps:

- For each prime contractor and subcontractor, Keen Independent determined whether the company had a business establishment in Arizona based upon ADOT vendor records and additional research.
- Keen Independent then added the dollars for firms with Arizona locations and compared the total with that for companies with no establishments within the state.

Based upon analysis of combined ADOT and local agency contract dollars from July 2007 through June 2013, firms with locations in Arizona obtained:

- 97 percent of FHWA-funded contract dollars;
- 89 percent of state-funded contract dollars;
- 94 percent of FAA-funded contract dollars; and
- 87 percent of FTA-funded contract dollars.

Figure 3-7.
Dollars of ADOT and LPA prime contracts and subcontracts by location of firm, July 2007-June 2013

	Arizona	Out of State	Total
Dollars (millions)			
FHWA-funded	\$ 3,579	\$ 93	\$ 3,672
FAA-funded	17	2	19
FTA-funded	16	1	17
State-funded	<u>1,081</u>	<u>157</u>	<u>1,238</u>
Total	\$ 4,693	\$ 243	\$ 4,947
Percent			
FHWA-funded	97 %	3 %	100 %
FAA-funded	89	11	100
FTA-funded	94	6	100
State-funded	87	13	100
Total	95 %	5 %	100 %

Source: Keen Independent from ADOT and local agency contract data.

Based on this information and similar data for all contracts regardless of funding source, Keen Independent determined that Arizona should be selected as the relevant geographic market area for the study for FHWA-, FAA- and FTA-funded contracts as well as state-funded contracts. Therefore, Keen Independent's availability analysis examined firms with locations in Arizona. The quantitative analyses of marketplace conditions in Chapter 4 also focus on Arizona.